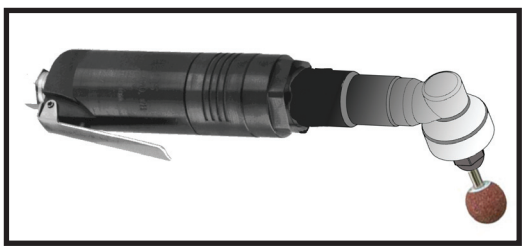
new 2010 year model

Henry Tools

Industrial Airtools at Work

Models
46 BBRA4
46 BBRA2
46 BBRAC
46 BBRAD

General Safety and Maintenance Manual



Features: Small Round Head for grinding in confined spaces.

Model Number	Exhaust Direction	Throttle Type	Speed	Power Output	Case Material
46 BBRA4	Front or Side	(L) Lever or (K) Safety Lever	13000 to 14000 R.P.M (13500rpm is standard)	0.9 H.P. (675 W)	Steel or Aluminum
46 BBRA2					
46 BBRAC					
46 BBRAD					

Case Material	Weight		Length	Diameter	Air Consumption	Spindle Thread
	Aluminum	Steel				
Steel or Aluminum	2.8 Lbs (1.3 Kg)	3.5 Lbs (1.6 Kg)	9.1 Inches (231 mm)	1.6 Inches (41 mm)	25 CFM (11.8 L/S)	3/8-24 x 0.98 Inch (25mm)
						5/8-11 x 0.98 Inch (25mm)
						1/4 Inch Burrs/Mounted Points
						Burrs/M.P. of Size Matching the Insert Size

THE HENRY TOOL CO., MANUFACTURED BY HENRY TOOLS
498 So. Belvoir Blvd., South Euclid, OH 44121 U.S.A.
Ph: (216) 291-1011 or (800) 826-5257 • Fax: (216) 291-5949 or (800) 303-2800
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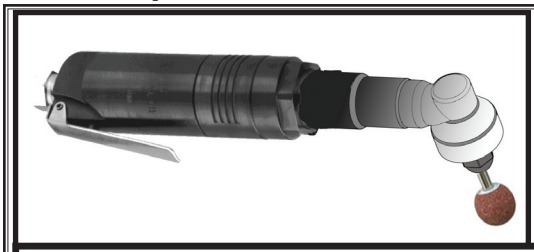

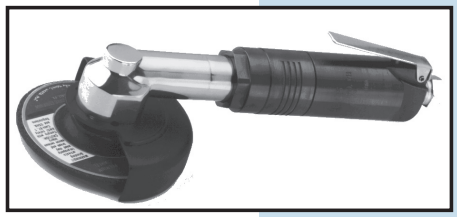

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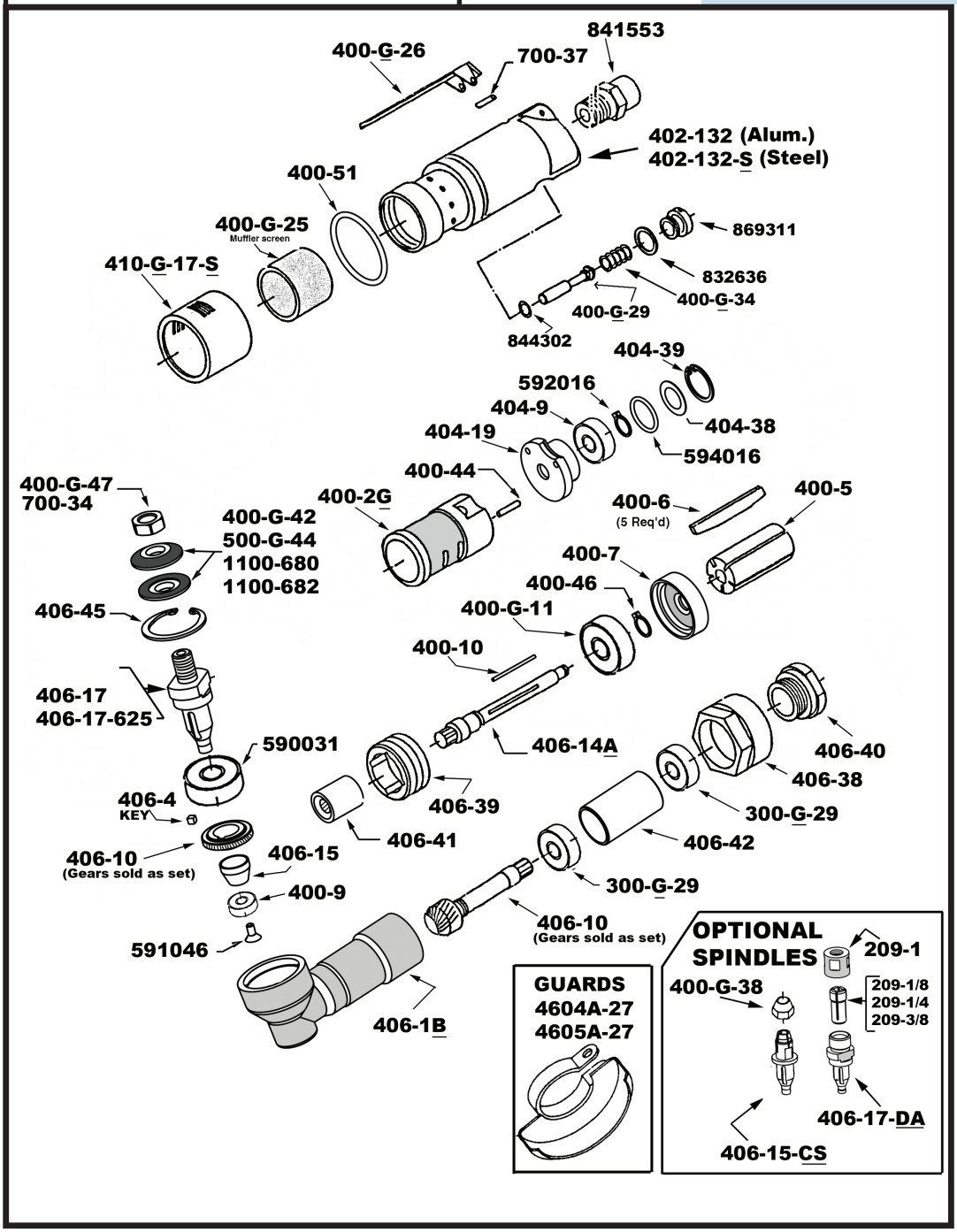

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Revised 05/05/10

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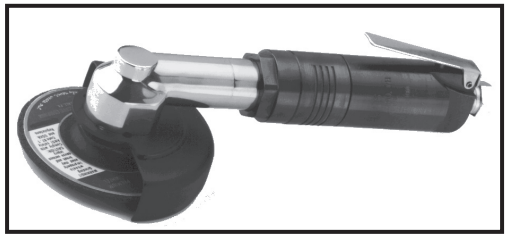

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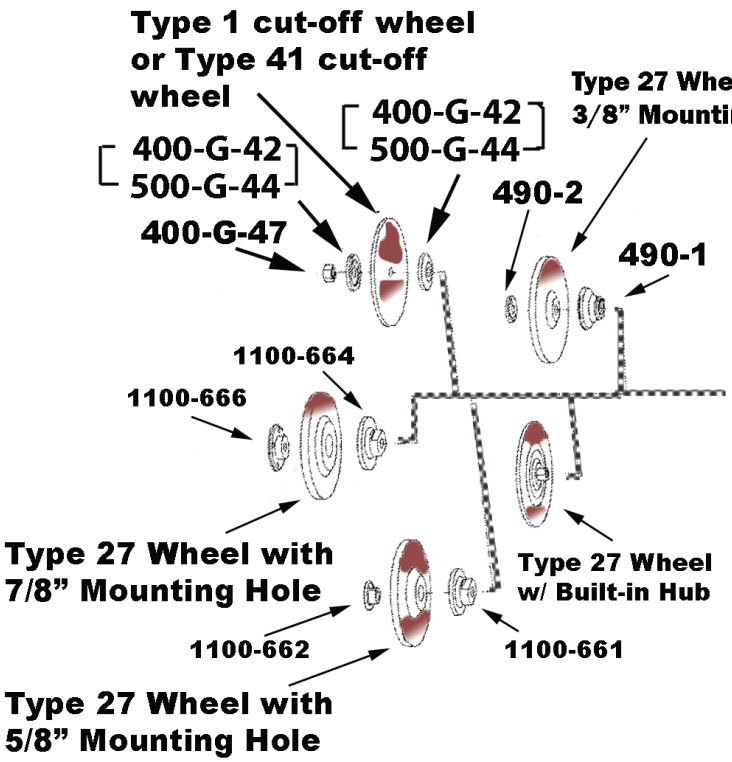
Right Angle Grinder with 3/8-24 x .980 Output Spindle



PART NUMBER	DESCRIPTION
209-1	ERICKSON STYLE COLLET NUT
209-1/8	1/8" COLLET INSERT
209-1/4	1/4" COLLET INSERT
209-5/16	5/16" COLLET INSERT
209-3/8	3/8" COLLET INSERT
209-1/4	1/4" COLLET INSERT
209-5/16	5/16" COLLET INSERT
209-3/8	3/8" COLLET INSERT
300-G-29	BEARING
400-G-11	FRONT BEARING

PART NUMBER	DESCRIPTION
400-G-25	MUFFLER SCREEN
400-G-26	THROTTLE LEVER
400-G-29	THROTTLE VALVE-INCLUDES 844302
400-G-34	SPRING
400-G-38	COLLET NUT
400-G-42	3/8-24 FLANGE (2"-3" WHEELS)
400-G-47	3/8-24 JAM NUT
400-2G	CYLINDER
400-5	ROTOR

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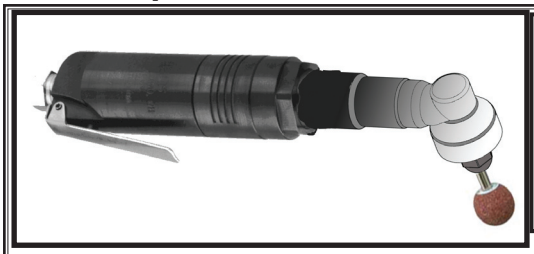

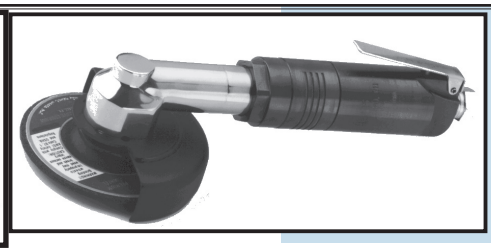

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PART NUMBER	DESCRIPTION
400-6	BLADE (5 REQ.)
400-7	FRONT ENDPLATE
400-9	REAR OUTPUT BEARING
400-10	KEY
400-44	CYLINDER ROLL PIN
400-46	SNAP RING
400-51	O-RING
402-126	SAFETY LEVER BARE
402-127	SAFETY LEVER PIN
402-128	LOCKOUT LEVER FOR SAFETY LEVER
402-129	SAFETY LEVER SPRING
402-132	ALUMINUM CASE (SPECIFY SPEED)
402-132-S	STEEL CASE (SPECIFY SPEED)
402-132-S-FT	STEEL FLOW THRU CASE
404-9	REAR MOTOR BEARING
404-19	REAR ENDPLATE
404-38	BEARING COVER
404-39	SNAP RING
406-1B	OUTPUT HOUSING (MAIN HEAD UNIT)
406-4	KEY
406-10	GEAR SET (SOLD AS SET)
406-14A	MOTOR SPINDLE
406-15	GEAR SPACER
406-15-CS	COLLET OUTPUT SPINDLE
406-17	3/8-24 X .980 OUTPUT SPINDLE
406-17-625	5/8-11 X .980 OUTPUT SPINDLE
406-17-DA	ERICKSON COLLET SPINDLE
406-38	LOCKNUT
406-39	MOTOR RETAINER
406-40	HEAD RETAINER NUT
406-41	COUPLING
406-45	SNAP RING
410-G-17F-S	STEEL FRONT EXHAUST SLEEVE
410-G-17-S	STEEL SIDE EXHAUST SLEEVE (STANDARD)
500-G-44	3/8 ID FLANGE (4"-5" WHEELS)
700-34	5/8-11 JAM NUT
700-37	THROTTLE LEVER PIN

PART NUMBER	DESCRIPTION
1100-680	5/8 I.D. FLANGE (6" OR SMALLER WHEELS)
1100-682	3/8 I.D. FLANGE FOR 5"-6" WHEELS
590031	BEARING
591046	SCREW
592016	SNAP RING
594016	O-RING
832636	GASKET
841552	3/8 NPT TO 3/8 NPT BUSHING
841553	3/8 NPT TO 1/4 NPT BUSHING(STANDARD)
844302	O-RING
869311	THROTTLE VALVE CAP
GUARDS	
4604-27	4" TYPE 27 GUARD
4605-27	5" TYPE 27 GUARD
TOOLS /WRENCHES	
490-3	PIN SPANNER
1100-044	7/16" WRENCH
1100-063	5/8" WRENCH
1100-068	WRENCH 11/16"
1100-075	WRENCH 3/4"
1100-094	15/16" WRENCH
ASSEMBLIES	
PART NUMBER	DESCRIPTION
510240	MOTOR REPAIR KIT
510118	ANGLE HEAD REPAIR KIT
402-26	SAFETY LEVER ASSY.
AA-402-132	ALUMINUM CASE ASSY. SPECIFY SPEED FOR CASE ASSY.
AA-402-132-K	ALUMINUM SAFETY CASE ASSY. SPECIFY SPEED FOR CASE ASSY.
AA-402-132-S	STEEL CASE ASSY. SPECIFY SPEED FOR CASE ASSY.
AA-402-132-SK	STEEL SAFETY CASE ASSY. SPECIFY SPEED FOR CASE ASSY.
ACCESSORIES	
PART NUMBER	DESCRIPTION
300-16	1/8" COLLET ADAPTER
400-78	3/8-24 TO 5/8-11 ADAPTER
405-24	BACKING PLATE FOR 490-KR

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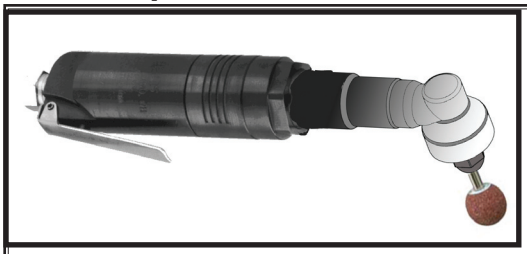

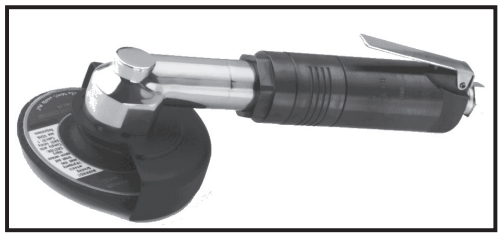

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PART NUMBER	DESCRIPTION
490-K	3/8-24 X .980 TYPE 27 ADAPT. ASSY.
490-KR	3/8-24 X .580 TYPE 27 ADAPT. ASSY.
490-1	BACKING PLATE FOR 490-K
490-2	NUT FOR 490-K & 490-KR
1100-660	3/8-24 TO 5/8 I.D. TYPE 27 ADAPTOR ASSEMBLY
1100-661	3/8-24 TO 5/8 I.D. BACKING PLATE
1100-662	3/8-24 TO 5/8 I.D. ADAPTER NUT
1100-664	3/8-24 TO 7/8 I.D. BACKING PLATE
1100-666	3/8-24 TO 7/8 I.D. ADAPTER NUT
1100-668	3/8-24 TO 7/8 I.D. TYPE 27 // ADAPT. ASSY.
530196	1/8" ROUNDED TAPER BURR
530198	1/8" TAPER BURR
530200	1/8" FLAME BURR
530202	1/8" BALL BURR
530204	1/8" CYLINDRICAL BURR
530208	1/4" BALL BURR
530210	1/4" CYLINDRICAL BURR

This tool is designed to operate on 90 psig (6.2 bar) maximum air pressure with 1/4" (8 mm) hose. Do not use a grinder without recommended wheel guard. Do not use any wheel for which the operating speed listed is lower than the actual free speed of the Grinder.

SAFETY

1. Before operation check spindle speed with a tachometer. If the RPM exceeds the rated speed stamped on tool, servicing is required.
2. Inspect grinding wheels for bends, chips, nicks, cracks or severe wear. If the wheel has any of these, or has been soaked in liquids do not use. On brushes check for loose wires that may fly off in operation.
3. Start new grinding wheels under a steel bench. Run at full throttle for one minute. Defective wheels usually come apart immediately. When starting a cold wheel apply to work slowly, allow wheel to warm gradually.
4. Model 46BRAC grinders equipped with collets are intended for mounted wheels,points and carbide burrs. They are not guarded for type 1 wheels. If you have a type 1 wheel application,please purchase a guard (4604A, 405A Guards).
5. The Model 46BRA Grinders are equipped with a guard from the manufacturer. A guard is not needed for :a.) mounted wheels two inches (50 mm) or smaller; b.) grinders used for internal work, while within the work being ground.
6. At least one-half of the mandrel length (i.e. mounted wheel, burr, etc.) must be inserted into the collet. Secure collet chuck tightly.
7. Safety levers that prevent accidental startup are available from the manufacturer.(402-26).
8. Before mounting or removing a wheel, disconnect grinder from air supply. The wheel should fit properly on arbor, do not use bushings or wheel flanges to adapt a wheel to any arbor unless recommended by the manufacturer. (Wheel flanges should be at least 1/3 the diameter of the grinding wheel.)
9. Wear safety goggles and other protective clothing. Continuous exposure to vibration may cause injury to your hands and arms.(See regulations.)
10. Properly maintained air tools are less likely to fail or cause accidents. If tool produces an unusual sound or vibrations repair immediately.
11. *NEVER MODIFY ANY PART OF THE TOOL OR ACCESSORIES!!*

DISASSEMBLE

1. Disconnect air supply and remove all wheels and accessories.
2. Secure the tool in vise vertically with angle head toward the upward direction. Clamp onto flats of the motor housing (402-132).
3. Unscrew lock nut (406-38). Disconnect angle housing from motor housing.)
4. Remove coupling (406-41), exhaust sleeve (410-G-17S), o-ring (400-51) and exhaust screen (400-G-25).
5. Unscrew motor retainer (406-39). (Flats are provided for a wrench.
6. Remove motor assembly from motor housing. Remove from vise.
7. Remove snap ring (404-39) from rear of motor assembly. Remove bearing cover (404-38) and o-ring (594016).
8. Remove snap ring (592016) out of spindle groove.
9. Install brass jaws onto vise. Secure the motor assembly vertically in the vise with the geared end toward the downward direction.
10. Clamp onto the outside diameter of cylinder (400-2G) and rear endplate (404-19).
11. Lightly tap spindle (406-14) out of rear bearing (404-9) with use of a 3/16" punch. DON'T drop the motor assembly. Remove from vise.
12. Push the rear bearing out of the read endplate with use of a small screwdriver.
13. Remove rotor (400-5), blades (400-6), key (400-10) and front endplate (400-7) from the front motor assembly.
14. Remove retaining ring (400-46) from the motor spindle with use of snap ring pliers.

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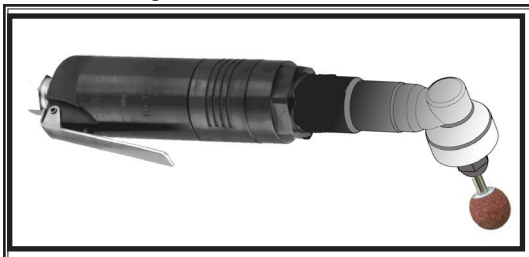

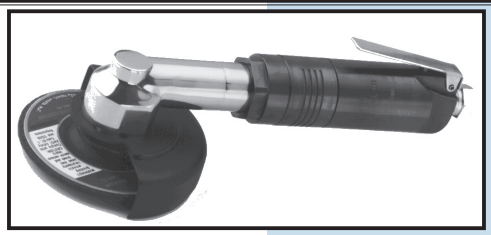

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15. Support the front spindle assembly vertically on a suitable drill block. Press spindle through front bearing (400-G-11) with an arbor press.

ANGLE HEAD DISASSEMBLY

1. Secure right angle head assembly in vise. Remove retainer (406-40) using a wrench. Remove angle head from vise.
2. Grasp end of pinion gear (406-10) and pull pinion gear assembly from angle head.
3. Secure the pinion gear assembly in vise vertically with gear head (406-10) in downward direction. Clamp onto the side of gear spacer (406-42) and rear most bearing (300-G-29). Lightly tap the pinion gear stem through the rear bearing with use of a 3/16 inch punch. Remove from vise.
4. Support the pinion gear stem assembly vertically on a suitable drill block. Press the pinion gear stem off of bearing (300-G-29) using an arbor press.
5. Remove retaining ring (406-45).
6. Grasp the output spindle (406-17) and pull entire assembly free from angle head (406-1B).
7. Remove screw (591046) from end of spindle assembly.
8. Support the spindle assembly vertically on a suitable drill block. Press spindle through bearings (400-9) & (590031), spacer (406-15), ring gear (406-10), and key (406-4).
9. OPTIONAL: To check the throttle valve, secure the motor housing horizontally in a vise. Unscrew and remove the throttle valve cap (869311). Lift out throttle valve spring (400-G-34) and throttle valve (400-G-29). Replace o-ring (844302) if worn.

MOTOR ASSEMBLY

1. Clean all parts before assembly.
2. Support bearing (400-G-11) on a suitable drill block. Press spindle (406-14A) through bearing until it bottoms on shoulder.
3. Place retaining ring (400-46) into groove in spindle.
4. Slide front endplate (400-7) over spindle and onto front bearing (400-G-11).
5. Place key (400-10) into keyway in spindle. Slide rotor (400-5) onto spindle.
6. Replace all 5 blades (400-6) into slots. Place cylinder (400-2G) over rotor. (with cylinder pin facing upwards).
7. Place rear endplate (404-19) locating cylinder pin in smaller hole of the rear endplate.
8. Replace bearing (404-9) in rear endplate. Tap in place with a suitable bearing driver.
9. Place snap ring (592016) in spindle groove. Place o-ring (594016), bearing cover (404-38) and snap ring (404-39) into rear of end plate.
10. Secure case (402-132) in vise vertically. Slide motor assembly into case.
11. Replace o-ring (400-51), exhaust screen (400-G-25), and exhaust deflector (410-G-17S).
12. Screw motor retainer (406-39) into case and tighten without damaging threads. (Flats are provided for a wrench).

ANGLE HEAD ASSEMBLY

1. Press bearing (300-G-29) on gear stem (406-10) with an arbor press.
2. Place spacer (406-42) and bearing (300-G-29) onto end of gear stem with arbor press.
3. Press bearing (590031) onto spindle (406-17). Place key (406-4) in slot of spindle.
4. Place ring gear (406-10) onto spindle and over the top of the key in spindle and press together with an arbor press.
5. Place spacer (406-15) and bearing (400-9) over end of spindle. Press in place with arbor press.
6. Thread screw (591046) in end of spindle and tighten.
7. Grease the teeth of the gears. (important).
8. Place spindle assembly into housing (406-1B).
9. Replace retaining ring (406-45) into groove in front of angle head.
10. Slide lock nut (406-38) over end of housing and tighten retainer nut (406-40).
11. Replace coupling (406-41) on spline on end of motor spindle. Place angle head onto end of motor housing. Align spline inside coupler.
12. Tighten lock nut on motor case and run tool.
13. Replace guard on tool. Check RPM with a reliable tachometer. Tool must run at or below speed stamped on tool.

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